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ARTICLE VII.

DESCRIPTIONS OF PLANTS COLLECTED ALONG THE ROUTE, BY W. P. BLAKE,
AND AT THE MOUTH OF THE GILA.

BY JOHN TORREY.

Mr. Blake, the geologist of the Expedition commanded by Captain Williamson, having requested me to examine and report on the plants that he found in his explorations, as well as those collected near Fort Yuma, by Major Thomas and Lieutenant Du Barry, of the United States army, I have prepared the following list. The drawings for the illustrations were made by Mr. E. Dwight Church, a young artist of this city, and the engraving was executed by Mr. Prestele.

JOHN TORREY.

NEW YORK, May 1, 1857.

ARGEMONE MEXICANA, *Linn.* On the Colorado, and in other parts of California. An extremely hispid white flowered variety, which seems to be the same as *A. munita*, *Durand & Hilg. Pl. Herm.*

NASTURTIUM OBTUSUM, *Nutt. in Torr. & Gray, Fl. 1, p. 74.* With the last, in wet places. Flowers through the summer.

SISYMBRIUM DEFLEXUM, *Harv.; Torr. in Bot. Whipp. Rep.* Sandy places in the Colorado. Varies greatly in size.

DITHYREA CALIFORNICA, *Harv. in Hook. Lond. Jour. Bot. 4, p. 77. t. 5; Torr. in Bot. Whipp. Rep.* California desert; March.

OLIGOMERIS GLAUDESCENS, *Camb.; Gray, Pl. Wright, 2, p. 16.* Dry places between the Colorado and the sea coast; April, June.

SESUVIUM PORTULACASTRUM, *Linn; DC. Prodr. 3, p. 453; Var floribus subsessilibus, Gray, Pl. Wright, 1, p. 13.* Flowers on short pedicels. Stamens about 50. Sandy banks of the Colorado.

FAGONIA CALIFORNICA, *Benth. Bot. Sulph. p. 10.* Near Fort Yuma. This species is, as Benthham remarks, closely related to *F. Chilensis* and *F. Cretica*; but we think it more closely approaches the former than the latter. (Tab. I.)

LARREA MEXICANA, *Moricand; Torr. in Emory's Report, p. 137, t. 0.* This is the well known *Creasote-plant* or *Creasote bush*. It grows from four to six feet high. It is very common in the desert west of the Colorado, and in barren spots on the mountains near that river.

SPHERALCEA INCANA, *Torr. in Gray, Pl. Fendl. p. 23; Gray, Pl. Wright, p. 21.* River allu-

PERITYSE EMORYI, *Torr. & Gray, in Emory's Rep. p. 142.* On both sides of the Colorado, and west to the mountains. The characters seem to be constant.

ASCLEPIAS (OTARIA) SUBULATA, *Decaisne in DC. Prodr. 9, p. 571.* In the desert; not uncommon. It occurs also in Lower California. This is the species which, in the botany of Whipple's expedition, we suspected might be *A. subulata*. We now possess better specimens, with the leaves, and have scarcely a doubt that it is the species described by Decaisne under that name, notwithstanding the description does not apply in all respects. The stem is erect, 2-4 feet high, straight, simple, or sparingly branched above, either smooth and glaucous, or somewhat pubescent. The leaves are almost filiform, and erect; the lower ones nearly two inches long. Umbels sometimes solitary, but more commonly several in a terminal panicle, 10-20-flowered; peduncles 1-2 inches long, erect; pedicels 6-8 lines long, and like the peduncles, pubescent. Flowers about as large as in *A. variegata*. Sepals broadly ovate, acute. Petals (apparently white) ovate-oblong, rather acute, reflexed. Hoods of the crown twice as long as the nearly sessile gynostegium, dilated above, slightly toothed at the summit; horn somewhat exserted. Follicles about $4\frac{1}{2}$ inches in length, narrowly oblong, acute at the base, much attenuated above, smooth and even. (Tab. VII.)

SARCOSTEMMA HETEROPHYLLUM (*Engelm. Mss.*): volubile, glabrum; foliis petiolatis inferioribus lineari-lanceolatis hastatis, superioribus linearibus; pedunculis glabris elongatis folia superantibus; pedicellis calycibusque pubescentibus; corolla rotata glabra, margine fimbriata coronæ interioris lobis ovato-globosis gynostegii subbreiores. Near Fort Yuma; August-September. Stem 10-20 feet long. Lower leaves cordate-hastate at the base, 2-3 lines wide, the upper ones merely obtuse at the base, and $1-1\frac{1}{2}$ line wide. Flowers pale purple. This is 1679 of Wright's New Mexican collection.

LIPPIA NODIFLORA, *Michx, Fl. 2, p. 15.* Alluvial banks of the Colorado; flowering through the summer. The leaves vary considerably in form. Some of the specimens show a transition to *L. lanceolata*.

NAMA BIFLORA, *Choisy in DC. Prodr. 10, p. 183;* var. SPATHULATA, *Torr. in Capt. Parke's Rep.* California Desert; flowering through the summer.

NICOTIANA MULTIFLORA, *Nutt. Plant. Gamb.?* On the Colorado and in other parts of California; September. We cannot be sure that this is Nuttall's plant. It is about 2 feet high, minutely pubescent, viscid on the upper part of the stem. The radical leaves are wanting in the specimens; the cauline are 2 inches long, oblong-spatulate entire, clasping and auriculate at the base. Flowers in a loose panicle; the pedicels 2-4 lines long. Calyx campanulate, the 5-cleft segments lanceolate and nearly equal. Corolla tubular, with a small, somewhat spreading border, about 8 lines long, pale dull yellow. Capsule 2-valved, the valves deeply 2-parted. It seems to belong to the section Rustica of Dunal.

PHYSALIS. Three species were found near Fort Yuma by Major Thomas, but we have laid them aside until we make an examination of all the North American species of this puzzling genus.

DATURA THOMASII (n. sp.): annua, caule erecto (humili); foliis ovatis repandis v. sinuato-dentatis glabriusculis; floribus brevi-pedicellatis; corolla calyce pentagono acute dentato duplo longiore; capsula globosa nutante aculeata, aculeis validis pubescentibus. Near Fort Yuma; Sept.-Oct. Stem 12-18 inches high. Flowers nearly one-third smaller than in *D. Stramonium*. Corolla white, tinged with purple on the inside, near the summit. Fruit, (without the prickles,) about an inch in diameter. Seeds blackish, tuberculate-rugose. This appears to be different

from any *Datura* described by Dunal. We have received it only from the Great Colorado. Specimens collected by Mr. Schott have the spines less thickly set, and the leaves more strongly toothed.

LYCIUM BARBINODE, *Miers, Ill. South Am. Bot.* 2 p. 115, t. 68, E. Colorado Desert; March.

MOHAVE VISCIDA, *Torr. & Gray, Bot. Whipple's Rep.* With the last. Flowers apparently sulphur-yellow, speckled towards the base with purple. The prominent palate saccate, purple, bearded with yellow hairs. Style cylindrical, nearly as long as the stamens; stigma capitate. The fruit of this remarkable plant is not yet known, but there can now remain little doubt of its having been rightly placed near *Martynia*.

PHACELIA CILIATA, *Benth. in Trans. Linn. Soc.* 17, p. 280. Near Fort Yuma. This species is to us one of the rarest of the genus.

GILIA LINIFLORA, *Benth. l. c. in DC. Prodr.* 9, p. 315. San Matio, near San Francisco.

FOUQUIERA SPLENDENS, *Engelm. in Wislitz. Mem. N. Mex.* p. 98 On the Colorado and Lower Gila, westward to the mountains.

ERITRICHIMUM ANGUSTIFOLIUM (n. sp.): annuum, pilis patulis hispidissimum; caule e basi ramoso; foliis linearibus; racemis paucifloris; floribus sessilibus, calyce hispido, sepalis lanceolato-linearibus; corolla hypocraterimorpha (alba); nuculis ovatis acutis minutissime granulatis. With the last. Plant 6–12 inches high, slender, the lower branches often prostrate, hispid with white (or, on the inflorescence, yellowish) spreading hairs. Leaves an inch or more in length, and scarcely a line wide. Racemes about half an inch long, the flowers closely approximated. Sepals very hispid. Corolla white, falling early, less than a line long; segments of the limb obovate, very obtuse and entire. Stamens with very short filaments, which are inserted near the base of the tube. Nutlets extremely minute, convex, and minutely papillose on the back, acutely angular on the face, one or more of them often abortive. This species is not rare in California, and I think it occurs also in Oregon. There are specimens of it in the herbarium of the Philadelphia Academy of Natural Sciences, named by Nuttall, "*Myosotis* (*Aphanisma*) *pygmæa*," but the plant is evidently an *Eritrichium*, as that genus is now characterized. The manuscript specific of Nuttall is changed, because it is not applicable.

PECTOCARYA LINEARIS, *DC. Prodr.* 10, p. 120. Near Fort Yuma. The specimens agree with Chilean ones in our herbarium.

HELIOTROPIMUM CURASSAVICUM, *Linn.; DC. Prodr.* 9, p. 538. Common in most places where the soil is saline, from the Colorado to the Pacific.

ACANTHOGONUM RIGIDUM, *Torr. Bot. of Whipple's Rep.* Near Fort Yuma. The specimens are in an early state, and enable us to correct and complete the characters of this genus, as given in the work just quoted. We have also seen a specimen of the plant in a small collection made by A. B. Gray, Esq., while making the survey of a route for a Southern Pacific Railroad, near the parallel of 32°. The plant seems never to attain a greater height than about 3 inches; beginning to flower immediately above the cotyledons. It is furnished with both radical and cauline leaves, which are ovate or obovate, half an inch long, mostly obtuse; the base tapering to a petiole which is about twice the length of the lamina. Involucres in axillary sessile clusters, subtended by long straight subulate and spine-like divaricate bracts. Involucre always 3-cleft; the segments very unequal, one of them sometimes much elongated, straight. Perianth yellow, campanulate-funnelform, hairy at the summit. Stamens 9, included: filaments inserted at the upper part of the tube. Ovary oblong, acute at each end, rough on the angles towards the summit.

ACANTHOGONUM? *CORRUGATUM* (n. sp.): caule superne trichotome ramoso; bracteis brevibus recurvis; fasciculis involuorum pedunculatis; involucri laciniis subfoliaceis subæqualibus spinescentibus, apice incurvis, tubo cylindrico corrugato. Near Fort Yuma. This species seems to be almost intermediate between *Acanthogonum* and *Chorizanthe*. It has the habit of the former, with the cylindrical tube and incurvate tips of the involucre of the latter. But the involucre segments are never more than three, and the filaments are not inserted near the base of the perianth, as in *Chorizanthe*, but high up in the tube. Plant only two or three inches high.

CHORIZANTHE FIMBRIATA, Nutt. *Pl. Gamb. in Jour. Acad. Phil. (n. ser.)* 1, p. 168; Benth. in *DC. Prodr.* 14, pars I, p. 25. California Desert, and on Pacific coast. (Tab. VIII.) This belongs to a section of the genus *Ptilosepala*, by Nuttall. A second species discovered by Dr. Antisell, in Parke's expedition, near San Felipe, it will be described and figured in the botany of that expedition, under the name of *C. laciniata*.

ERIOGONUM THOMASII (n. sp.): annuum foliis radicalibus rosulatis longe petiolatis ovatis supra pubescentibus subtus albo-lanatis; scapo trichotome ramosissimo glaberrimo, ramis capillaribus, involucri longe filiformi-pedunculatis late campanulatis 5-dentatis 8-10-floris, bracteolis cuneato-oblongis obtusis, margine longe pilosis, perigonii basi extus pubescentibus, laciniis exterioribus subpanduriformibus, interioribus lineari-oblongis. Near Fort Yuma. Also found by Colonel Frémont, probably on the lower part of the Gila, in 1849. Plant about a span high; leaves 6-8 lines long; the petioles varying from half an inch to an inch in length. Branches of the scape widely spreading. Peduncles 4-8 lines long. Involucre scarcely half a line long, deeply 5-toothed. Flowers nearly as large as the involucre, glandularly pubescent at the base, the pedicels articulated close to the perianth. Divisions of the perianth very obtuse; the exterior cordate at the base and reflected at the sides, a little emarginate; the inner about one third longer than the exterior ones. Filaments and ovary glabrous. Fruit not seen. Resembles *E. trichopodium*, but that species has the flowers strongly hairy on every part, acute and nearly equal segments of the perianth, and narrowly linear bracteoles.

SALICORNIA FRUTICOSA, Linn.? Cañada de las Uvas, in saline soils; California. The specimens are not sufficient for accurate determination; but the plant appears to be identical with the common frutescent species.

SCHÖBERIA CALCEOLIFORMIS, Moq. in *DC. Prodr.* 13, pars I, p. 166. With the last. Moquin states that this plant has been found near New York, which must be a mistake.

EUPHORBIA ALBOMARGINATA, Torr. & Gray, *Bot. Pope's Rep.* p. 18. Alluvial soils near the Colorado; September.

EUPHORBIA POLYCARPA, Benth. *Bot. Sulph.* p. 50. With the last.

EUPHORBIA SETILOBA (Engelm. Mss.): "prostrata, pilis brevibus patulis sæpe glanduliferis tota puberula; foliis minutis e basi vix obliqua subcordata ovatis obtusis; stipulis minutis deciduis; glomerulis lateralibus; involucri dorso profunde fissis, appendiculis in lacinias 3-4 subulatas divis; stylis elongatis fere ad basin bifidis, stigmatibus clavellatis divaricatis; capsula hispidula; seminibus ovatis acutatis transverse rugulosis." Near Fort Yuma. Stem 3 inches long. Leaves 1 line long, reddish. Appendages of the glands white, very conspicuous, almost setaceous. There are only about three male flowers in each involucre.

OREODAPHNE CALIFORNICA, Nees, *Syst. Laur.* p. 463. Martinez, California. In that region the plant is scarcely a tree, the height being only from 10 to 20 feet. The inhabitants know it by various names, such as mountain laurel, balm of heaven, spice bush, &c. The Spaniards

are said to use the dried and pulverized leaves as a condiment. The fruit is nearly globose, about the size of an ordinary plum, and when ripe, (which is about the middle of July,) of a dark purple color.

QUERCUS HINDSII, *Benth. Bot. Sulph.* p. 55. *Q. longiglanda*, *Torr. in Frem. Geogr. Mem.* *Q. Ransomi*, *Kellogg, in Proceed. Calif. Acad. Nat. Sc.*, p. 25? With the next; bearing its long ripe acorns in October.

QUERCUS CRASSIPOCULA (n. sp.): foliis perennantibus coriaceis petiolatis oblongis acutis integerimis v. parce acuteque dentatis subtus pubescentibus demum glabris; fructibus sessilibus, cupula depresso-hemispherica crassissima, squamis latissimis tomentosis brevi-acuminatis glanda, ovata glabra. (Tab. IX.) Tejon Pass. This handsome evergreen oak is usually but a middle-sized tree. It is certainly very near *Q. densiflora*, *Hook. & Arn.*, of which I have no good acorns for comparison. That species (judging from the figure of *Hooker, Ic.*, t. 380,) has smaller acorns, a thin, hemispherical cup, and narrow scales. The leaves vary in size and form; on young shoots they are often sharply dentate. The cups are sometimes nearly an inch and a half in diameter, and extremely thick, with a rounded margin. The scales are broader than long, and have a small, abrupt point. The lower ones, and sometimes all of them, are more or less thickened and pulvinate, so that they give to the cup a tuberculate appearance. Gland often an inch and three-quarters long, obtuse, only a third or fourth part immersed in the cup.

QUERCUS AGRIFOLIA, *Née, in Ann. Sc. Nat.* 3, p. 371. *Q. oxyadenia*, *Torr. in Sitgr. Rep.* t. 17. *Q. acutiglandis*, *Kellogg, l. c.* Bear cañon of the Sierra Nevada. We have elsewhere remarked how variable are the leaves and acorns of this species. The acorns collected by Mr. Blake were all elongated, and very acute. The plant generally forms low, scrubby bushes, but is sometimes twenty feet high.

QUERCUS DOUGLASII, *Hook. & Arn. Bot. Beech.* p. 371; *Hook. Ic.* t. 382 and 383. Summit of Tejon Pass. This belongs to the group that includes *Q. alba*.

QUERCUS IMBRICARIA, *Michx. Fl.* 2, 197; *Michx. f. Sylv.* 1, p. 65, t. 15? Tejon Pass; leaves only. Without the fruit we cannot determine the species with certainty, but the leaves so strongly resemble those of the Laurel-oak, that we would have little doubt as to the identification had the *Q. imbricaria* ever been found before west of the Rocky Mountains. The late Captain Gunnison collected it on the headwaters of the Arkansas.

POPULUS MONOLIFERA, *Ait. Kew. ed.* 1, 3, p. 406; *Michx. f. Sylv.* 1, t. 96, fig. 2. *P. Canadensis*, *Michx. l. c. t.* 95. This is the common cottonwood, which has a range from the Atlantic to the Great Colorado, and almost as great an extent of latitude. It is abundant in some places near Fort Yuma.

SALIX LONGIFOLIA, *Muhl.*, var.? : foliis dense serratis; fructibus glabris. On the Colorado.

EPHEDRA ANTISIPHILITICA, *Moric.* Mountains east of San Diego.

CYPERUS PHYMATODES, *Muhl. Gram.* p. 23. Abundant in the immediate valley of the Gila, ten miles from Fort Yuma; November. Near Kern River, Tule; August.

CYPERUS MICHAUXIANUS, *Schultes; Torr. Cyp.* p. 259. Banks of the Colorado, in moist places; a dwarf form.

SCIRPUS LACUSTRIS, *Linn.; Torr. Cyp.* p. 321. Kern River; August. The specimens are remarkably tall, being more than eight feet high, but the panicle of spikelets is very small.

VILFA UTILIS (n. sp.): glabra culmis prostratis v. assurgentibus ramosissimis tenuibus; foliis (1"-2") angustis convolutis confertis patulis v. recurvis; panícula (1") contracta pauciflora; (spiculis $\frac{2}{3}$ "); glumis subæqualibus lanceolatis acutis paleas æquales acutiusculas dimidio bre-

voribus. Between the Tejon Pass and the Lost Hills of California. This grass is not uncommon in New Mexico and western Texas, where it is used by the natives for stuffing pads for loaded mules, its soft thread-like culms making it admirably fit for this purpose. Mr. Blake's specimens are nearly two feet long, which is twice its usual length. In the young flowers the glumes are scarcely one-third the length of the paleæ, but at maturity, they are commonly one-half their length. It belongs to a group of the genus that includes *V. Virginica*, *Linn.* and *V. Matrella*, *Nees*. It is also nearly related to *V. humifusa*, *Hook.*, but that has unequal glumes, the upper one nearly as long as the paleæ, or sometimes one-third shorter. No. 958, of Fendler's New Mexican collection, and No. 1983, of Wright's, are the same as the Californian plant, differing only in the more rigid leaves, and somewhat more acute paleæ.

Another, and apparently new, *Vilfa* was found by Mr. Blake, at the head of Tulare Valley, but his specimens are rather imperfect, and we defer giving it a name for the present. It is an erect grass, about six feet high, simple, with narrow, convolute leaves, and scabrous sheaths. The panicle is two feet long, and much contracted. The spikelets are lanceolate, and nearly terete, scabrous under a lens. Glumes equal, rounded on the back, one-fourth shorter than the lanceolate, rather acute paleæ; the inferior paleæ a little hairy at the base. No. 1993, of Wright's collection, is near this species, but it differs in the glabrous flowers, and the paleæ a little shorter than the glumes, without any hairiness at the base.

POLYPOGON MONSPELIENSIS, *Desf.* Var. ? *MONOLEPIS*: palea inferiore setam infra apicem exserente glumis duplo longiorem, superiore nulla. Posé Creek, Walker's Pass; August. Culm terete, simple. Leaves flat, and with the sheaths puberulous; ligule oblong. Panicle oblong, dense and spiciform, somewhat interrupted. Glumes equal, acuminate, and cuspidate; serrulate on the keel. Inferior palea scarcely more than half as long as the glumes, 4-toothed at the summit, with an awn arising above the middle of the back nearly twice the length of the glumes; the upper palea wanting, or extremely minute. If the characters here given prove to be constant, this is probably a distinct species from *P. Monspelienensis*.

MUHLENBERGIA DIFFUSA, *Schreb. Gram.* 2, t. 51. Var. *aristis multo longioribus*. Tulare Valley. Perhaps a distinct species.

ERIOCOMA CUSPIDATA, *Nutt. Gen.* 1, p. 30. *Urachne lanata*, *Trin. Act. Petrop.* 1834, p. 126. "Grows in bunches, on plains; October." Mr. Blake has not recorded the precise station of this grass, but we have never received it before from any part of California.

ARISTIDA HUMBOLDTIANA, *Trin. & Rupr. Stip.* p. 118? Head of Tulare Valley, California; September. Culm apparently tall, glabrous; sheaths smooth, hairy at the throat. Panicle erect, pyramidal, about a foot long, the branches solitary, in pairs, or semiverticillate; the divisions appressed and racemose. Glumes slightly unequal; the lower one about 4 lines long, the upper $\frac{1}{2}$ a line longer, cuspidate. Paleæ a little exceeding the glumes. Lateral setæ as long as the flowers, the central somewhat longer, equally spreading, straight. We are by no means confident that the species is correctly determined.

BOUTELUNA (CHONDROSIUM) POLYSTACHYA, *Benth. Bot. Sulph.* p. 56; *Torr. in Emory's Rep.* p. 153. Hill-sides, on the Colorado, and in the desert west. There are usually 4 or 5 spikes, but sometimes only 3. At each joint of the spikes there are two kinds of spikelets; the lower one 1-flowered; the upper sesquiflorous. The rudimentary flower is sometimes reduced to 3 awns, with a tuft of hairs at their common base. (Tab. X.)

MEGASTACHYA—near *M. conferta* (*Poa conferta*, *Ell.*) Kern River, Tule; August. Culm 2-3 feet high. Leaves narrow, convolute when old, glabrous, as is also the sheath. Panicle

elongated, much contracted, and spiciform. Spikelets 8-10-flowered, 3 lines long, and scarcely half a line wide.

FESTUCA. Kern River. This I have not received before, and it is not described as a North American *Festuca*. It may, however, be a Chilian species, and I regret not having the means of determining it at present. It is a tall grass, with flat smooth glaucous leaves, and a long contracted panicle. The spikelets are about 10-flowered. Glumes very unequal; the upper one much longer, and abruptly mucronate at the tip. Lower palea hairy on the margin toward the base, bifid at the tip, with a short straight bristle between the teeth. Upper palea much smaller.

PHRAGMITES COMMUNIS, *Linn.* Warm Springs, Cohuillas.

ELYMUS ARENARIUS, *Linn.* Posa creek; August. This occurs also in other parts of California, but is not found on the eastern side of the continent.

PANICUM CRUS-GALLI, *Linn.* Var. *Setaria Californica*, *Kellogg, in Proceed. Calif. Acad. Nat. Sc. p. 27?* Kern River. This is a very tall form. The panicle consists of numerous approximated appressed branches, forming a dense spiciform inflorescence. The flowers are awnless; the inferior glume short and very broad, with a minute abrupt point. Dr. Kellogg's plant was found at the head of the Sacramento Valley.

PANICUM CAPILLARE, *Linn.* With the last. It agrees with the Eastern grass, and it may be an introduced species in California.

DESCRIPTION OF THE PLATES.

PLATE I. FAGONIA CALIFORNICA, (page 359.) (A BRANCH OF THE NATURAL SIZE.)

- Fig. 1. A flower; moderately enlarged.
- Fig. 2. A sepal, side view; more enlarged.
- Fig. 3. The same, as seen from the inside, equally magnified.
- Fig. 4. A petal; and,
- Fig. 5. A stamen; both considerably magnified.
- Fig. 6. A capsule; moderately enlarged.

PLATE II. DALEA EMORYI, (page 360.) (A BRANCH OF THE NATURAL SIZE.)

- Figs. 1-3. Leaves, of the natural size.
- Fig. 4. A flower; moderately enlarged.
- Fig. 5. Calyx of the same, shown separately.
- Fig. 6. The corolla laid open; *a*, the banner; *b, b*, wing-petals; *c, c*, keel-petals.
- Fig. 7. Staminal tube; enlarged.
- Fig. 8. Part of one of the stamens; considerably magnified.
- Fig. 9. The pistil; moderately enlarged.

PLATE III. CERCIDIUM FLORIDUM, (page 360.) (A BRANCH OF THE NATURAL SIZE.)

- Fig. 1. The corolla, showing the arrangement of the petals; enlarged.
- Fig. 2. A flower, from which the petals have been removed; more enlarged.
- Fig. 3. A stamen; still more magnified.
- Fig. 4. The pistil; equally magnified.
- Fig. 5. A legume, of the natural size.

PLATE IV. STROMBOCARPA PUBESCENS, (page 360.) (A BRANCH OF THE NATURAL SIZE.)

- Fig. 1. A flower; moderately enlarged.
- Fig. 2. The calyx, shown separately.
- Fig. 3. The corolla, laid open; more magnified.
- Figs. 4 and 5. Front and back views of a stamen; equally magnified.
- Fig. 6. An ovary; equally magnified.
- Fig. 7. Longitudinal section of the same.

PLATE V. TRICHOPTILIUM INCISUM, (page 361.)

(AN ENTIRE PLANT OF THE NATURAL SIZE.)

- Fig. 1. Involucre and receptacle ; moderately enlarged.
- Fig. 2. A flower ; more enlarged.
- Fig. 3. The corolla, removed ; equally magnified.
- Fig. 4. The same, laid open, and showing the stamens ; more magnified.
- Fig. 5. A stamen ; equally magnified.
- Fig. 6. Part of the style and its divisions, showing the stigmatic lines ; still more magnified.
- Fig. 7. Achenium crowned with its pappus ; considerably magnified.
- Fig. 8. The five scales of the pappus spread out and magnified.
- Fig. 9. One of the scales of the pappus ; more highly magnified.
- Fig. 10. A portion of the same ; highly magnified.
- Fig. 11. Longitudinal section of an achenium ; and,
- Fig. 12. Transverse section of the same ; both moderately enlarged.

PLATE VI. EREMIASTRUM BELLIOIDES, (page 361.)

(AN ENTIRE PLANT OF THE NATURAL SIZE.)

- Fig. 1. The involucre and receptacle ; enlarged.
- Fig. 2. A ray-flower ; more enlarged.
- Fig. 3. A disk-flower ; equally magnified.
- Fig. 4. Corolla of the same, laid open, showing the stamens.
- Fig. 5. A stamen ; considerably magnified.
- Fig. 6. The style, with its divisions, showing the stigmatic lines ; more magnified.
- Fig. 7. An achenium, crowned with its pappus ; magnified.
- Fig. 8. A portion of the pappus, from the same.

PLATE VII. ASCLEPIAS SUBULATA, (page 362.)

(UPPER PART OF THE PLANT, OF THE NATURAL SIZE.)

- Fig. 1. One of the hoods of the crown, side view ; magnified.
- Fig. 2. The same, with one side folded back to show the horn.
- Fig. 3. An anther, front view ; considerably enlarged.
- Fig. 4. The same, seen from the inside.
- Fig. 5. A pair of pollen masses ; considerably magnified.

PLATE VIII. CHORIZANTHE FIMBRIATA, (page 364.)

(AN ENTIRE PLANT OF THE NATURAL SIZE.)

- Fig. 1. An involucre and its solitary flower ; magnified.
- Fig. 2. The involucre shown separately ; equally magnified.
- Fig. 3. The same, laid open.
- Fig. 4. Perianth ; equally magnified.
- Fig. 5. The perianth, laid open ; more magnified.
- Fig. 6. One of the segments of the same.
- Fig. 7. Ovary and styles ; equally magnified.

PLATE IX. QUERCUS CRASSIPOCULA, (page 365.)
(A BRANCH, OF THE NATURAL SIZE.)

Fig. 1. A leaf from a young shoot.

PLATE X. BOUTELOUA (CHONDROSIUM) POTYSTACHYA, (page 366.)
(AN ENTIRE PLANT, OF THE NATURAL SIZE.)

- Fig. 1. A spikelet; magnified.
Fig. 2. The superior glume.
Fig. 3. Inferior palea of the perfect flower; magnified.
Fig. 4. Superior palea of the same; equally magnified.
Fig. 5. Sterile flower; also magnified.
Fig. 6. The achenium, crowned with the persistent styles.



ERIGONIA CILIOLATA





Chenopodium





NERIUM FLORIDUM

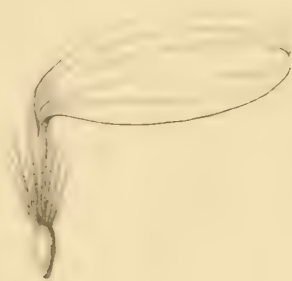


LYSIACHNE VILLOSA



TRICHOPTILIUM INCISUM













CHORIZANTHE FIMBRIATA





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BOUTELOUA POLYSTACHYA.

